

What is claimed is:

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1. A communication interface device for managing wireless data
communications between an in-vehicle device installed in a vehicle and a
plurality of global network based data processing resources, said
communication interface device being located external to said vehicle
comprising:
2. a wireless transceiver for wirelessly data communicating between said in-
vehicle device and said communication interface device;
3. a plurality of communication interfaces for data communicating between said
communication interface device and said plurality of global network based
data processing resources; and
4. a memory interconnected with a microprocessor for managing data
communication data flow including caching received data communications
from said wireless transceiver, or from said plurality of communication
interfaces, and for data, or protocol conversion between said wireless
transceiver, and said plurality of communication means;
5. wherein, data communicated between said in-vehicle device and said wireless
transceiver is processed, and routed by said microprocessor to said plurality of
communication means for data communication to said plurality of global
network based data processing resources;

25 wherein, data communicated between said plurality of communication
26 interfaces is processed, and routed by said microprocessor to said wireless
27 transceiver for data communication to said in-vehicle device;

28 *Conⁿ*
29 *Sf n*
30 wherein, said in-vehicle device data communicates, by way of said
31 communication interface, with said plurality of global network based data
32 processing resources.

- 1 2. The communication interface device in accordance with claim 1 wherein, said
2 plurality of communication interfaces includes at least one of the following
3 communication interface types: a universal serial bus port, a personal data
4 assistant interface, an RS232 interface, an RS485 interface, a carrier current
5 interface, a network connection to the Internet, a modem interface, a wireless
6 modem interface, a cellular phone transceiver, a cellular phone interface, a
7 wireless data link, or a local area network interface.
- 8
1 3. The communication interface device in accordance with claim 1 wherein, said
2 plurality of interfaces is an interface to a personal computer, said personal
3 computer having data communication access to said plurality of global
4 network based data processing resources, such that said in-vehicle device, by
5 way of said interface to said personal computer, data communicates with said
6 personal computer, and data communicates with said plurality of global
7 network based data processing resources.
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1 4. The communication interface device in accordance with claim 1 wherein, said
2 plurality of global network based data processing resources includes a
3 personal computer, said plurality of interfaces is an interface to said personal
4 computer;
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6 wherein, said communication interface device data communicates with a
7 programmable storage device, or a personal data assistant, said programmable
8 storage device, or said personal data assistant being programmable by said
9 personal computer, or by said plurality of global network based data
10 processing resources having data communication access to said personal
11 computer, or said in-vehicle device.

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1 5. The communication interface device in accordance with claim 1 wherein, said
2 communication interface device is an internet appliance device.

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1 6. The communication interface device in accordance with claim 1 wherein, said
2 communication interface device is interconnected with at least one of the
3 following: garage door opener, gas pump, toll booth, change toll booth,
4 wireless toll-pass system, traffic light pole, traffic light, parking gate, parking
5 terminal, a store display, an internet appliance device, or a vehicle analyzer.

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1 7. A method of monitoring the location of a vehicle equipped with an in-vehicle
2 device, said in-vehicle device wirelessly data communicates with a plurality
3 of global network based data processing resources wherein, wireless data
4 communication between said in-vehicle device and said plurality of global
5 network based data processing resources is facilitated by a communication
6 interface device comprising the steps of:

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8 from said communication interface device client side:

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10 a) receiving a data communication at said communication interface device
11 from said in-vehicle device, said data communication occurring when said in-
12 vehicle device is in wireless proximity with said communication interface
13 device;

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15 b) routing said data communication to said plurality of global network based
16 data processing resources;
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18 c) receiving a plurality of return data as required from said plurality of global
19 network based data processing resources;
20 *Sub A3*
21 d) communicating wirelessly said plurality of return data to said in-vehicle
22 device;
23
24 from the plurality of global network based data processing resources server
25 side;
26
27 e) identifying said data communication received from said communication
28 interface device;
29
30 f) modifying a vehicle location database, said vehicle location database being
31 located on at least one of said global network based data processing resources;
32
33 g) determining appropriate said plurality of return data; and
34
35 h) communicating said plurality of return data to said communication
36 interface device for wireless data communication to said in-vehicle device.
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1 8. The method of monitoring the location of a vehicle in accordance with claim 7
2 wherein, the step of receiving return data includes receiving command and
3 control data from said plurality of global network based data processing
4 resources, wherein command and control data can include enabling or
5 disabling operation of said vehicle.

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1 9. The method of monitoring the location of a vehicle in accordance with claim 7
2 wherein, said communication interface device is an internet appliance device.

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1 10. The method of monitoring the location of a vehicle in accordance with claim 7
2 wherein, the step of modifying a vehicle location database includes modifying
3 a vehicle location database for at least one of the following applications:
4 regulating attendance based on said vehicle entry to, or exit from a parking
5 area through a parking gate or parking terminal, enabling or disabling
6 operation of said vehicle when said vehicle passes in wireless proximity to
7 said communication interface device, said vehicle route or trip progress
8 tracking, calculating said vehicle rate of speed between a plurality of
9 checkpoints each of said plurality of checkpoints being equipped with said
10 communication interface device, or calculating said vehicle rate of speed
11 between said plurality of checkpoints each of said plurality of checkpoints
12 being equipped with said communication interface device for the purpose of
13 identifying speeders and issuing speeding tickets.

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1 11. A method of data communicating between a wireless device and an in-vehicle
2 device installed in a vehicle, wherein said wireless device, by way of said in-
3 vehicle device, communicates with a plurality of global network based data
4 processing resources, or accesses said in-vehicle device data comprising the
5 steps of:

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7 a) initiating data communication between said wireless device and said in-
8 vehicle device;

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10 b) allowing said wireless device to access data stored within said in-vehicle
11 device or accessible by said in-vehicle device;

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13 c) routing said wireless device data to a communication interface device, said
14 communication interface device having data communication access to a
15 plurality of global network base data processing resources;
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17 d) receiving a plurality of return data as required from said plurality of global
18 network based data processing resources;
19 *Sub A3*
20 e) communicating said plurality of return data to said in-vehicle device by
21 way of said communication interface device; and
22
23 f) routing said plurality of return data received at said in-vehicle device to said
24 wireless device.

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1 12. The method of data communicating between a wireless device and an in-
2 vehicle device in accordance with claim 11 wherein, the step of allowing said
3 wireless device to access data stored in, said in-vehicle device or accessible by
4 said in-vehicle device includes allowing said wireless device to access at least
5 one of the following: said vehicle operational status, said vehicle telemetry
6 data, said vehicle metric data, said in-vehicle device memory, said in-vehicle
7 device stored digital content including audio data, video data, data files, said
8 in-vehicle device settings, or said vehicle or said in-vehicle device system
9 preferences.

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1 13. The method of data communicating between a wireless device and an in-
2 vehicle device in accordance with claim 11 wherein, said wireless device is at
3 least one of the following: a wireless phone, a personal data assistant, a pager,
4 a pocket sized personal computer, an internet appliance device, or a
5 programmable data storage device.

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1 14. The method of data communicating between a wireless device and an in-
2 vehicle device in accordance with claim 11 wherein, said wireless device data
3 communicates with said in-vehicle device by way of at least one of the
4 following methods: hard wired connection, infrared connection,
5 BLUETOOTH standard and protocol, or WIRELESS APPLICATION
6 PROTOCOL and standard.

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2 93 15. The method of data communicating between a wireless device and an in-
3 vehicle device in accordance with claim 11 wherein, said communication
4 interface device is an internet appliance device.

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1 16. The method of data communicating between a wireless device and an in-
2 vehicle device in accordance with claim 11 wherein, said communication
3 interface device is interconnected with an internet appliance device.

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1 17. A method of servicing a vehicle including procuring automotive replacement
2 parts from a communication interface device, said communication interface
3 device being accessible by a customer, said communication interface device
4 being located in an auto parts store, an auto parts area, a vehicle service
5 center, or a vehicle sales center comprising the steps of:

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7 a) allowing said customer to interact with said communication interface
8 device;

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10 b) accessing digital content to aid said customer in a plurality of products
11 selection, wherein accessing digital content includes accessing local digital
12 content or databases, or remote global network based data processing
13 resources including remote digital content or databases;

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15 a) presenting digital content to said customer, including digital content related
16 to said plurality of products;

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18 d) allowing said customer to physically select at least one of said plurality of
19 products based in part on digital content presented to said customer from on-
20 hand inventory;

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22 e) determining, through customer interaction with said communication
23 interface device, if said customer successfully physically selected at least one
24 of said plurality of products from on-hand inventory;

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26 f) allowing as required said customer to order any one or more of said
27 plurality of products by way of said communication interface device; and

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29 g) effectuating as required an e-commerce, or e-business transaction to fulfill
30 said customer's order.

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1 18. The method of servicing a vehicle in accordance with claim 17 further
2 comprising the step of:

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4 a) charging a plurality of fees for digital content and services.

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1 19. The method of servicing a vehicle in accordance with claim 18 wherein, the
2 step of charging a plurality of fees for digital content and services includes
3 charging for at least one of the following: distributing said plurality of digital
4 content, for royalty payments, for service fees, for download charge, for
5 network time, for digital content access, time utilized charge, or for
6 facilitating an e-commerce or e-business transaction.

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1 20. The method of servicing a vehicle in accordance with claim 17 wherein, the
2 step of allowing a user to interact with said communication interface device
3 includes at least one of the following interactions: transferring data between a
4 wireless device and said communication interface device, or manually
5 interacting with said communication interface device through voice
6 recognition, biometric recognition, keypad, general purpose said
7 communication interface device input or output, or touch screen input.

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1 21. The method of servicing a vehicle in accordance with claim 20 wherein, said
2 wireless device is at least one of the following: a wireless phone, a personal
3 data assistant, a pager, a pocket sized personal computer, an internet appliance
4 device, or a programmable data storage device.

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1 22. A method of using a wireless device to transfer data between an in-vehicle
2 device installed in a vehicle and a personal computer located external to said
3 vehicle, said personal computer being interconnected with a communication
4 interface device, said personal computer data communicates with said wireless
5 device by way of said communication interface device comprising the steps
6 of:

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8 a) initiating a data communication between said wireless device and said in-
9 vehicle device;

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11 b) transferring data between said wireless device and said in-vehicle device
12 wherein, transferring data includes transferring data related to at least one of
13 the following: data related to said vehicle, data related to said in-vehicle
14 device, data related to said wireless device, data from said personal computer
15 previously stored in said wireless device, or data from a plurality of global

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16 network based data processing resources previously stored within said
17 wireless device or accessible by said wireless device;
18
19 c) transporting said wireless device to a physical location external to said
20 vehicle and in wireless proximity to said communication interface device
21 wherein, data communication between said wireless device and said
22 communication interface device can occur;
23 Sub A₃
24 d) initiating a data communication between said wireless device and said
25 communication interface device; and
26
27 e) transferring data between said wireless device and said personal computer
28 by way of said communication interface device wherein, transferring data
29 includes transferring data related to at least one of the following: data related
30 to said vehicle, data related to said in-vehicle device, data related to said
31 wireless device, data stored within said wireless device or accessible by said
32 wireless device including transferring data between said wireless device and
33 said plurality of global network based data processing resources.
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1 23. The method of using a wireless device to transfer data in accordance with
2 claim 22 wherein, said wireless device is at least one of the following: a
3 wireless phone, a personal data assistant, a pager, a pocket sized personal
4 computer, an internet appliance device, or a programmable data storage
5 device.

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